

Atty. Docket No. YOR920000167US1  
(590.013)

**REMARKS**

Applicants and the undersigned are most grateful for the time and effort accorded the instant application by the Examiner. The Office is respectfully requested to reconsider the rejections presented in the outstanding Office Action in light of the following remarks.

Claims 1-19 were pending in the instant application at the time of the outstanding Office Action. Claims 1, 9-10, and 18-19 are independent claims; the remaining claims are dependent claims. Claims 1-19 stand rejected under 35 USC 112, second paragraph, as being indefinite. Claims 1-19 stand rejected under 35 USC 102(e) as being anticipated by Parthasarathy et al. Reconsideration and withdrawal of the present rejections is hereby respectfully requested.

The Office's rejection of Claims 1-19 under 35 USC 112 relates to the Applicants' use of the term "discriminant." In support thereof, the Examiner asserts this term is used in the claims "[t]o mean, 'score', while the accepted meaning is 'An expression used to distinguish or separate other expressions in a quantity or equation.'"

As stated in the Applicants' specification, however, a "discriminant" is "[i]nput for rendering a final decision...preferably in the form of a real-valued function assigned to each class." (Page 6, line 17) While the form of a discriminant is disclosed, the use of the word in Claims 1-19 does not take on an uncommon definition as compared to the common form set forth by the Examiner, since all discriminants must take some form. Claim 1 is illustrative of this point. Broadly speaking, Claim 1 indicates, *inter alia*, that a

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“score” is “based on the target discriminant and the background discriminant...”; the discriminants being based on the identity claim, target model(s), and background model(s), which are themselves based on the target individual and at least one background individual. (See Claim 1) At least one embodiment includes, “[a] decision arrangement which determines a score based on the target discriminant and the background discriminant, and accepts or rejects the identity claim based on the determined score.” (Page 14, lines 6-9) Thus, “score” and “discriminant” do not have interchangeable meanings, although the former may be based upon the later. Therefore, it is respectfully submitted that Claims 1-19 are not indefinite and withdrawal of the rejections thereof based on 35 USC 112 is requested.

Claims 1-19 also stand rejected under 35 USC 102(e) as being anticipated by Parthasarathy et al. As presently written, Independent Claims 1, 9, 10, 18, and 19 all recite the use of a “target discriminant,” a “background discriminant,” and a “score” determined based, *inter alia*, on the “background discriminant.” As discussed in the present application, unlike previous efforts, the discriminant for the background class is target-dependent. (Page 8, line 5) Furthermore, the discriminant for the target is, also, target-dependent. (See Page 7, line 14 - Page 8, line 2) In other words, “[i]n at least one embodiment of the present invention, both the (target and background) discriminant functions depend on the claimed identity.” (Page , lines 7-9) This stands in stark contrast to Parthasarathy et al., in which it appears that a “speaker-dependent hidden Markov model (HMM)” is compared to “speaker-independent phone models” stored in a “lexicon database memory.” (Col. 3, lines 13-23). In the present case, target-dependency is not

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met by using "speaker-independent phone models". This alone precludes anticipation of the claimed invention, since "[a] claim is anticipated only if each and every element as set forth in the claim is found...". *E.g., Verdegaal Bros. v. Union Oil of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Furthermore, the rejection of the Independent Claims' "background discriminant" based upon the reference's speaker-dependent HMM is also improper, because the later fails to teach the former. Broadly speaking, the discriminant for the background class is preferably a target-dependent function of individual voiceprint-based discriminants in the background population, in which individual discriminants are inherent in background population models. Thus, several background population models preferably assist in serving as input into the background discriminant function, as well as weights. (Page 8, lines 4-8) As best understood, the HMM is used to generate a speaker dependent score, (Col. 2, line 23-26), for later combination with the speaker independent score. Parthasarathy et al., therefore, does not teach the present invention's background discriminant. It should also be noted that the use of speaker dependent and speaker independent scores in Parthasarathy et al. appears to be a part of a system for identification, followed by verification, which is fundamentally different to the present invention's use of discriminants (target and background), along with an identity claim, to verify the claim.

While it is clear the reference fails to anticipate the Independent Claims and, therefore, the dependent claims as well, for the reasons set forth above, there are

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additional differences between Parthasarathy et al. and the present invention. Some of these difference will now be discussed.

Relating to the rejections of Claims 2 (11), 3 (12), 4 (13), and 5 (14)

Parthasarathy et al. fails to teach a "background profile" or a "weight vector." As explained in the application, at least one embodiment of the present invention can be said to create a "target dependent background profile 325 which adapts the background population to the target." (Page 9, lines 12-13). Furthermore, "[t]he target discrimination will preferably be given directly by the voiceprint 330, while the background profile will be used subsequently to construct a target dependent background discrimination function." (Page 9, lines 16-18) There is no corresponding background profile teaching in the reference. Additionally, Parthasarathy et al. fails to teach a discriminant constructed by applying a pre-determined "profile" to a population of background models as conceptualized by the present invention. In addition, no weight vector is disclosed by Parthasarathy et al.

Related to the rejection of Claims 6 and 15, Parthasarathy et al. fails to teach a permutation matrix as used by the current invention. The rejection of Claims 7 and 16 is improper because the models referred to in Parthasarathy et al., as best understood, appears to be a different type of model used to identify - not verify. Furthermore, Parthasarathy et al. fails to teach multiple background models. Finally, the rejection of Claims 8 and 17 should be withdrawn, because Parthasarathy et al., again, does not appear to teach the use of multiple background models or a set of background profiles.

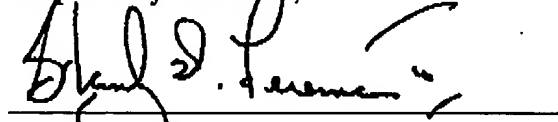
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In view of the foregoing, it is respectfully submitted that Claims 1-19 fully distinguish over the applied art and are thus in condition for allowance.

The "prior art made of record" has been reviewed. Applicants acknowledge that such prior art was not deemed by the Office to be sufficiently relevant to have been applied against the claims of the instant application. To the extent that the Office may apply such prior art against the claims in the future, Applicants will be fully prepared to respond thereto.

In summary, it is respectfully submitted that the instant application, including Claims 1-19, is presently in condition for allowance. Notice to the effect is hereby earnestly solicited. In the unlikely event the Office does not agree the application is in condition for allowance, the Office is invited to call the undersigned to discuss the claims prior to the issuance of a second Office Action.

Respectfully submitted,



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